

REMARKS

Favorable reconsideration of this application, in view of the above amendments and in light of the following discussion, is respectfully requested.

Claims 15-23, 26, and 27 are pending in the application. Claims 15 and 27 are currently amended. Claims 1-14, 24, and 25 are canceled without prejudice or disclaimer. Support for amended Claim 1 can be found in the published application at paragraph [0045], for example. Support for amended Claim 27 is self-evident. No new matter is introduced.

In the outstanding Office Action, the specification is objected to for failing to provide proper antecedent basis for the claimed subject matter. Claims 15-24 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claim 27 was rejected under 35 U.S.C. §112, second paragraph, as indefinite. Claims 15-27 were rejected under 35 U.S.C. §103(a) as unpatentable over Downs et al. (U.S. Patent No. 5,951,431, hereafter “Downs”) in view of Gage. (U.S. Patent No. 6,139,462) and Fushimi (EP 0371340). Claims 19-21 were rejected under 35 U.S.C. §103(a) as unpatentable over Downs in view of Gage, Fushimi, and Dison et al. (U.S. Patent No. 4,038,189, hereinafter “Dison”).

With regard to the objection to the specification, amended Claim 27 removes the feature “wherein a thickness of the casing in the given rotational direction at the third corner portion is larger than a thickness of the casing in the given rotation direction at the second corner portion.” Accordingly, Applicants respectfully request that the objection to the specification be withdrawn.

With regard to the rejection of Claim 15 under 35 U.S.C. §112, first paragraph, the outstanding Office Action asserts that the disclosure does not support that the first corner portion has greater strength than **all the other corner portions**. Applicants agree with this assertion, however, Claim 15 recites that the first corner portion has increased strength

relative to **other corner portions** of the opening of the casing. Accordingly, Claim 15 does not recite *all* the other corner portions as asserted by the Office Action. Therefore, one of ordinary skill in the art would be so enabled to use and/or make the claimed subject matter.

With regard to the rejection of Claim 24 under 35 U.S.C. §112, first paragraph, Claim 24 is canceled by this response. For the reasons described above, Applicants respectfully request that the rejection of Claims 15-24 under 35 U.S.C. §112(1) be withdrawn.

With regard to the rejection of Claim 27 under 35 U.S.C. §112, second paragraph, Applicants respectfully submit that Claim 15, from which Claim 27 depends, recites a second corner portion of the opening. Accordingly, Applicants respectfully submit that “the second corner portion” recited in Claim 27 derives antecedent basis from independent Claim 15. Therefore, Applicants respectfully request that the rejection of Claim 27 under 35 U.S.C. §112(2) be withdrawn.

Applicants respectfully traverse the rejection of amended Claim 15 as unpatentable over the cited references. Amended independent Claim 15 recites, among other features, a casing that includes an opening such that the fatigue life of the casing is adjusted by making a shape of the opening asymmetrical with respect to the longitudinal rotational axis of the casing. Amended Claim 15 also recites that the opening is in a basically elliptical shape having a round shape at each of corner portions, the round shapes of adjacent corner portions are different from each other, and a radius of the round shape of each corner portion continuously changes. Moreover, amended Claim 15 recites a curvature radius of the round shape of the first corner portion of the opening, where a tensile strength is generated when the driving force is input in the given rotational direction, is larger than a curvature radius of the round shape of a second corner portion of the opening, where a compression stress is generated when the driving force is input in the given rotational direction.

Turning to the applied references, Figure 3 of Downs illustrates a differential case 112 including an assembly window 122a is contoured to be reverse mirror-imaged.¹ Figure 3 also illustrates that the assembly window 122a has a pair of opposed *circular edge portions 152* interconnected by a pair of opposed *elongated edge portions 154* such that each edge portion 154 is substantially parallel to central axis B.² Figure 3 also illustrates a radius R for circular edge portions 152 that originates from intersection of the A and B rotary axes.³ However, Downs does not suggest or disclose a radius of the round shape of each corner portion continuously changes.

Downs merely illustrates a reverse mirror-imaged opening in which **circular edge portions** are connected by parallel **elongated edge portions**. Further, Downs describes that each of the circular edge portions include a radius R. In contrast, amended Claim 15 recites that a radius of the round shape of each corner portion continuously changes. One of ordinary skill in the art would recognize that a **circular** edge portion that has a **constant radius R** is not equivalent to a radius of the round shape of each corner portion that continuously changes.

Moreover, the outstanding Office Action admits that Downs does not suggest or disclose the feature of “the case being configured such that the fatigue life of the casing when the driving force is repeatedly input to the input portion and the given rotational direction is greater than fatigue life of the casing when the driving force is repeatedly input in the input portion in the rotational direction opposite to the given rotational direction.” The Office Action asserts that this feature is merely functional and that an apparatus must be distinguished from the prior art in terms of structure rather than function. Furthermore, the Office Action asserts that Downs discloses all the claimed structural limitations and therefore anticipates the functional limitations as well.

¹ See Downs at column 3, lines 29-31.

² See Downs at column 3, lines 31-37.

³ See Downs at column 3, lines 37-39.

As stated above, Downs does not suggest or disclose a radius of the round shape of each corner portion that continuously changes. As the structure of Downs differs from that of the structure recited in amended Claim 15, Downs does not suggest or disclose the above feature indicated as functional by the Office Action. Based on the foregoing, Downs does not suggest or disclose all the features of amended Claim 1.

Gage fails to cure the deficiencies of Downs. Figure 4 of Gage illustrates an unenumerated opening formed on differential case 40. As shown in Figure 4 of Gage, the unenumerated opening consists of four corners with fixed radii that are connected by straight portions formed at right angles. Clearly the unenumerated opening illustrated in Gage does not suggest or disclose a radius of the round shape of each corner portion that continuously changes. Accordingly, Gage does not suggest or disclose all the features of amended Claim 15.

Fushimi and Dison fail to cure the deficiencies of Downs and Gage. Fushimi and Dison were each applied for a feature other than the opening of the recited differential gear unit. In fact, Fushimi is directed towards a gear wheel, and Dison is directed towards a dual filtering system. Moreover, each of these references is silent with regard to a differential gear housing. Accordingly, Fushimi and Dison do not suggest or disclose an opening in which a radius of the round shape of each corner portion continuously changes.

Based on the foregoing, even the combined teachings of Downs, Gage, Fushimi, and Dison do not suggest or disclose all the features of amended Claim 15. Applicants respectfully submit that amended Claim 15 is in condition for allowance.

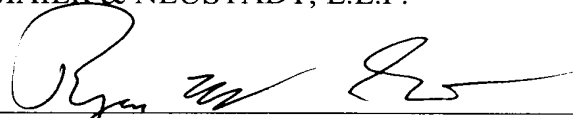
The dependent claims are respectfully submitted to be in condition for allowance for at least the same reasons as the independent claims from which they depend. Moreover, the dependent claims recite additional features not suggested or disclosed by the cited references.

For the reasons discussed above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance for Claims 15-23, 26, and 27 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better condition for allowance, the Examiner is encouraged to contact the Applicants' undersigned representative at the below-listed telephone number.

Respectfully submitted,

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